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Tiivistelmä – Referat – Abstract

Tutkielma käsittelee *phulkari*-tekstiilejä Punjabin alueelta Intiasta ja Pakistanista. *Phulkari* on isokokoinen huivi, jolla nainen peittää päänsä osana pukeutumista. *Phulkarit* on koristeltu näyttävän näköisellä, koko huivin täyttävällä kirjonnalla, jossa käytetään ensisijaisesti laakapistoja. *Phulkarit* ovat alun perin olleet erityisesti häihin liittyviä tekstiilejä, joilla on ollut rituaalinen merkitys. Niiden valmistaminen on ollut hidasta ja ne ovat olleet perintökalleuksia sekä myötäjäistekstiilejä. 1800-luvun lopulta lähtien niitä on kuitenkin valmistettu myyntiin. Vuoden 1947 jako Intiaan ja Pakistaniin hävitti tradition ainakin alkuperäisessä muodossaan, joskin kirjontaperinnettä on ylläpidetty pienimuotoisesti kotona työskentelevien naisten työllistäjänä.

Tutkielman aineistona ovat kuusi phulkari-tekstiiliä Suomen Kansallismuseon etnografisista kokoelmista. Neljä tekstiileistä on varsinaisia *phulkari*-huiveja, kaksi muita käyttötekstiilejä, joissa on *phulkari*-kirjontaa. Näitä tekstiilejä on tutkittu esinetutkimuksen menetelmin, soveltaen kysymyssarjaa, jolla saadaan yksityiskohtaista tietoa tekstiileiden valmistuksesta ja siinä käytetyistä tekniikoista. Jo valmista esinetutkimuksen kysymyssarjaa, joka oli suunnattu pukeutumisen tutkimukseen, muokattiin niin, että se soveltui paremmin etnografisille tekstiileille. Siihen lisättiin myös mikroskopian osuus millä saatiin aiempaa tarkempia tuloksia, langoista, kankaiden rakenteista, kirjontapistoista, sekä käytetyistä materiaaleista ja niiden kunnosta. Mikroskopian tutkimuslaitteina käytettiin USB-porttiin liitettävää Dino-Lite -mikroskooppia, sekä läpivalaisumikroskooppia kuitunäytteille.

Lähitarkastelun kautta jo tekstiilihistoriallisesti tunnetuista *phulkari*-huiveista saatiin uutta tietoa mikroskopian ja tarkan esinetutkimuksellisen analyysin avulla. Vaikka tutkimusaineisto oli pieni, niin se edusti lähes kaikkia *phulkarien* yleisimpiä tyylisuuntia. Tutkimusta varten muokatulla kysymyssarjalla on varmasti käyttöä myös tulevaisuudessa erilaisten tekstiilien lähitarkastelussa.

Avainsanat – Nyckelord – Keywords
Punjab, phulkari, tekstiilit, kirjonta, esinetutkimus

Säilytyspaikka – Förvaringställe – Where deposited
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Phulkari Textiles from India

In Close Examination

Jenni Suomela

Master's Thesis

South Asian Studies

Faculty of Arts

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Table of Contest

1. Introduction

In the summer of 2011, I did my university traineeship for South Asian studies in Kulttuurien museo (Museum of Cultures) which was at that time independent unit of the National Museum of Finland. The traineeship lasted for three months and it was the most wonderful summer I ever had. My work was to catalogue a donated textile collection to the museum's database.

This collection was compiled by Laila Kindt, retired craft teacher who had travelled around the world and with her ungenerous salary, bought amazing pieces of textiles as souvenirs. During that summer, I travelled in my mind with those artefacts the same journey around the globe. The collection included more that 130 items from all of the continents. Some were more prestigious and some common souvenirs. One of those textiles I studied during my traineeship was a *phulkari* from Punjab area in India.

My job was to write entries to the database, measure the textiles and write a description of their characteristics. I had to give detailed information about the weaving, sewing, embroidery, structure, colours and the context. I learned so much by studying where, how and by whom the textiles were used. Each of the textiles had their own story to tell. I got so excited about textiles and object-based research, that I ended up graduating as Craft teacher, MA and started working with a dissertation where the research material was textiles and methods came from object and material culture studies context.

It is understandable that textiles and objects in general can be difficult research material for an Indologist, historian, or anthropologist, but I have already a degree in Craft Studies, which makes Indian textiles a natural research topic for me. I can widen my perspective, learn new skills of research and be amazed and overwhelmed by these beautiful *phulkaris*. Welcome to the journey with me!

2. *Phulkari*

Phulkaris are embroidered shawls that were part of female festive costume in Punjab region. Before partition, Punjab was a large province of British India. It included Punjab province and Islamabad Capital Territory from Pakistani side and states of Punjab, Himachal Pradesh, Chandigarh and Haryana from Indian side (Figure 1). Regardless the religious reasons for the partition, *phulkaris* were part of all Hindu, Sikh and Muslim traditions, regardless of religion.

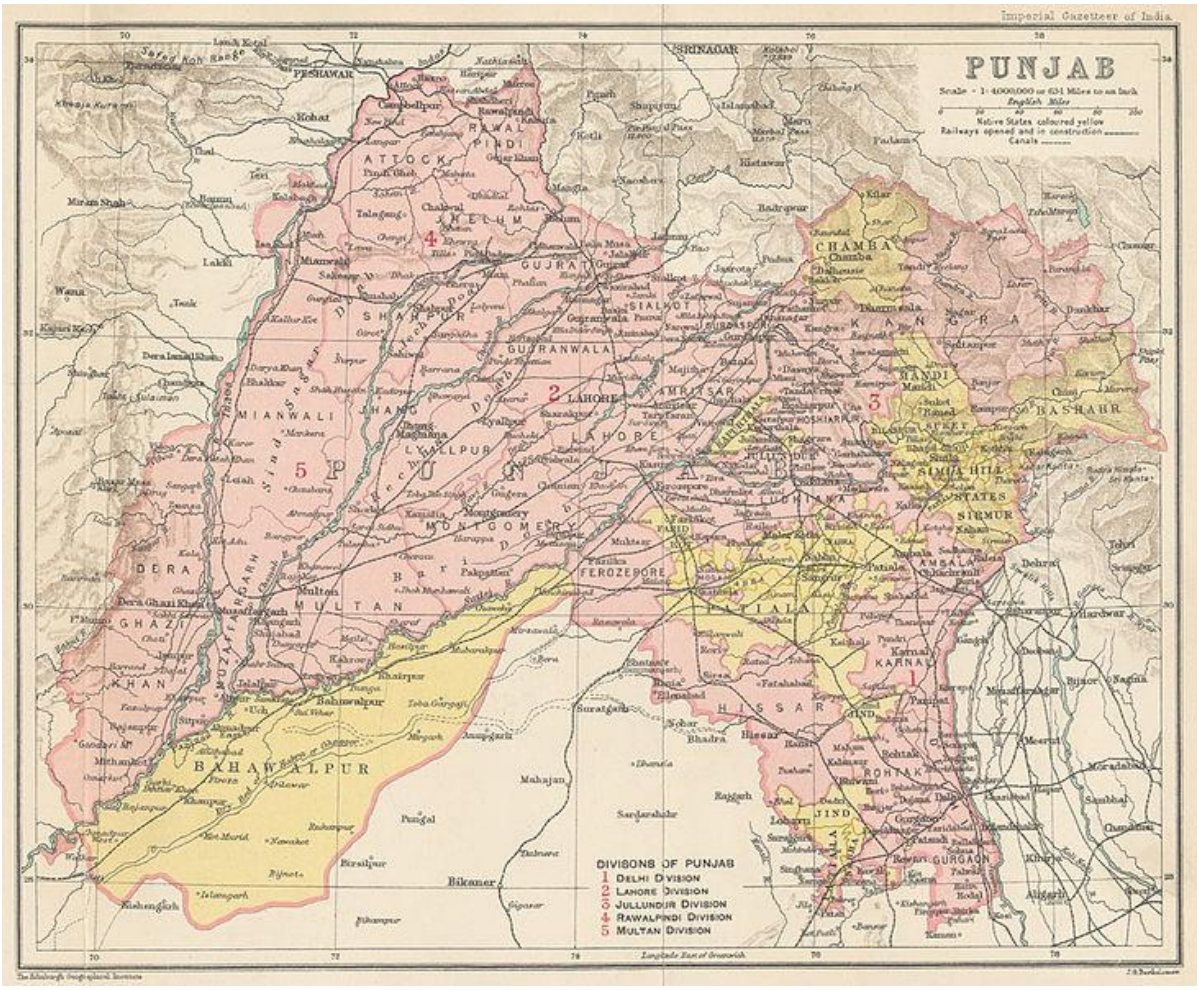


Figure 1. Province of Punjab. (*Imperial gazetteer of India*. New edition, published under the authority of His Majesty's Secretary of State for India in Council. Oxford: Clarendon Press, 1907-1909.)

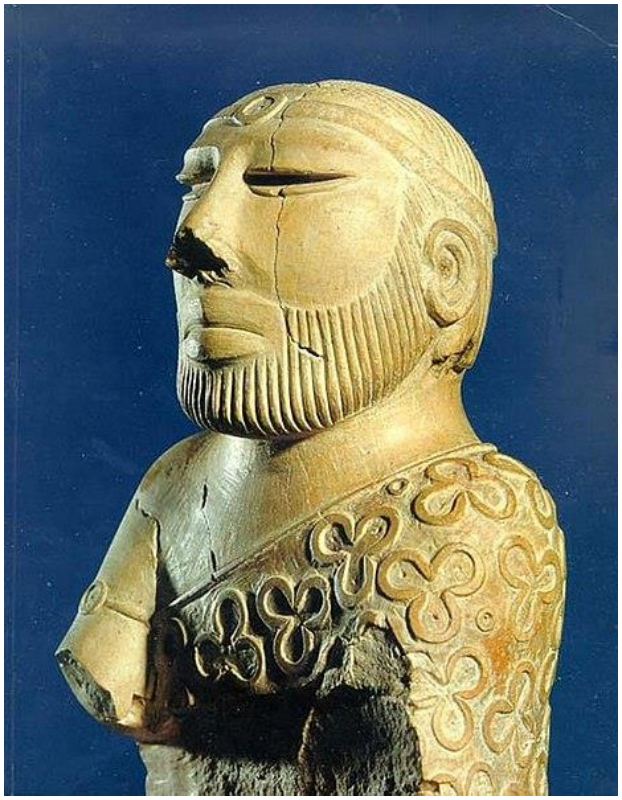
Phulkari is a general term for a large rectangular scarf which has cotton ground cloth that is fully embroidered with skilful darning stitches made with floss silk. *Phulkaris* have regional differences but the purpose of use is the same. Women use them to cover

their head as part of their clothing, together with long gathered skirt, *ghagra*, and close-fitting blouse, *choli* (Gupta & Mehta 2016).

2.1 History

The origins of *Phulkaris* have not been able to trace back in time. In general, Indian continent has long and complex history with textile culture which origins can be traced back to Harappan cultures and Mohenjodaro. Eye needles have been found from the mature Harappan period, 2700-1700 BC (Tripathi 2018). Controversial pieces of cotton cloth and cord were found in the John Marshall's led excavation from Mohenjodaro and were dated to 3000 BC (Gulati & Turner 1929). Controversy derives from the fact that, even though those finds were carefully documented by Gulati and Turner, they are vanished and their whereabouts are unknown (Balasubramaniam 2016). This unfortunate disappearance makes them inaccessible to re-examination with modern methods. According to Santhanam and Sundaram (1997) first textual references to textile processing are found already from *Rigveda* (compiling is dated to 4000-1200 BC) by mentions of looms and threads. First mentions of cotton are found in *Sutra* literature, in *Apasthamba Grihya Sutra* (c. 1000 BC) to be exact. Irene Good et al. (2009) again, has studied ancient silk finds from Indus Culture and came to conclusion that silk has been used as textile material much earlier than expected in Indian subcontinent. Contrary to what is assumed, silk is indigenous material to Indian textile culture and not originally imported from China.

Interpretation of the famous Priest King statue from Mohenjodaro (c. 2400-1900 BC) can be made from his dress (Figure 2). The cloth covering his left shoulder, is covered with motifs resembling three-leaf clovers. There are few possibilities how this kind design could have been produced on fabric. By weaving this kind of irregular surface would have required such complex techniques, that it is quite improbable alternative. Other options for pattern making are printing and embroidery – both possible alternatives. From the level of skilfulness in carving the statue, we have to understand that the craftmanship in Harappan culture was in very high level, and we can expect the textiles and textile technology been on a par with it.



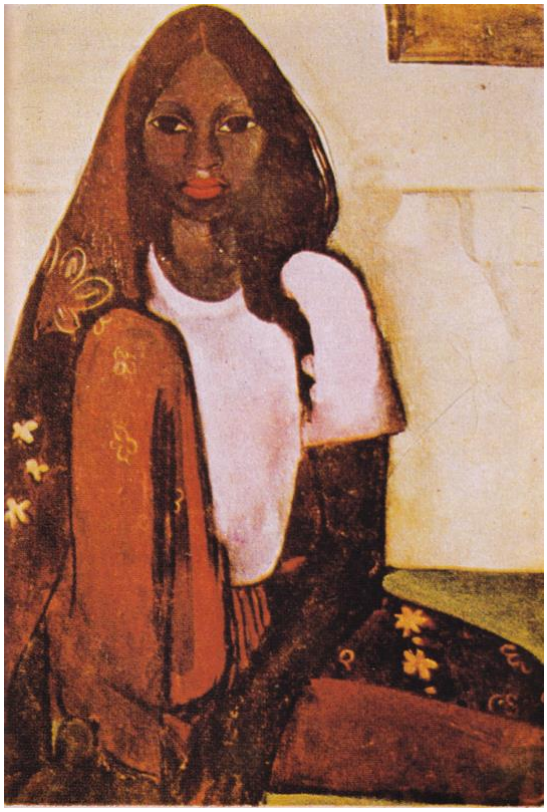


Figure 2. Priest King statue from Mohenjodaro (Photo: Mamoon Mengal, cc-by-sa-1.0)

Figure 3. “The Child Bride” by Amrita Sher Gil (1936). (Picture from www.wikiart.com, public domain)

These direct and indirect evidences of textile culture in Indian area do not prove anything on the history of *phulkaris*, but they do present the fact, that people in the area have had the skills, tools and materials to produce them already over 4000 years. Some speculations about the origins of *phulkaris* is after all presented. It is possible that the tradition has came from Kashmir by Persian influence. Persians have similar type of embroidery tradition called *gulkari* that has similar literal meaning. *Phul / gul* means ‘flower’ and *kari* derives from from words *kar / karna* ‘work / to work’. It has to be noted that Kashmiri embroidery tradition has very little resemblance with *phulkaris.* Another possibility for the origin is from Central Asia with Jat people who are peasants and originally pastoral nomads from the Valley of Sindh. (Das 1992, 94)

First mentions in literature are from *Harsacarita*, written by *Banabhatta* (7th century AD) in mentioned that some people were “embroidering flowers and leaves on the hem of clothes from the wrong side” – like in *phulkaris*. *Harsavardhana* was ruler of

Thaneśvar which was in Punjab and *Banabhatta* was his court poet. Guru Nanak (1469-1538), the founder of Sikhism, highlighted skill of embroidery as integral part of feminine duty. *Kadh kasida pahreh choli tan tu jane nari* – 'only when you can embroider your own costume you will be considered as a woman'. (Das 1992, 96) This must have influenced the willingness of women to spend their valuable time on this task.

As principal centres of the past are mentioned Rohtak, Gurgaon, Hissar, Karnal, adjacent areas of Delhi in the east, in current India; and Peshawar, Sialkot, Rawalpindi and Hazara in the west, now in Pakistan (Das 1992, 94).

The traumatising time of partition between India and Pakistan in 1947 almost caused the extinction of the whole tradition. It generated mass migrations and legions of people had to leave their homes and possessions. This and famines in late nineteenth century forced people to capitalise their heir looms and, on this account, *phulkaris* (Irwin & Hall 1973). Though unfavourable events had happened already during the colonial time under British rule in 1858-1947. Punjab use to have strong local cotton industry that cheap colonial products ran down. The tradition of *phulkaris* had leaned on the local *khaddar* production due to easy availability of the ground cloths. Then again, when local cotton industry died in end of nineteenth century due to European cotton production, women who had employed themselves with fibre production and spinning found new ways to make living in embroidering *phulkaris*. The British had exhibited *phulkaris* in various world fairs and gathered international interest to these products. (Gupta & Mehta 2016; 2019) This change the whole perspective of *phulkaris* from intimate items of care to commercial showpieces which were embroidered instead of passing love to gain livelihood.

According to Maskiell (1999) in 1900-10s *phulkaris* were still valued in their traditional position both in rural and urban areas – worn in weddings, and as inherited or exchanged gifts of affection. In 1920s they were going out of fashion even among the rural people. Governments in both sides of the border tried to revive the tradition with no success. After the independence, 1950s many refugee women were embroidering *phulkaris* for living (Maskiell 1999).

Due to nostalgia of ancient craft and art skills, tradition of *phulkaris* started to re-flourish in the turn of 1970s. Embroidering *phulkaris* gives women who are tied to their

homes economic freedom and possibility to express their emotions as textile artisans. (Gupta & Mehta 2019). The use of phulkari embroidery has broadened from shawls to other commercially viable products as cushion covers, wall hangings, kurtas (shirts) bedspreads, basically any imaginative clothing or interior items. Furthermore, the materials have changed. In addition to thick machine-made cotton khaddar, lighter fabrics like silk and polyester chiffons are used (Gupta & Mehta 2014). Inferior quality polyester yarns that make lint or superior quality viscose yarns are used for the embroidery (Malik 2011). Sometimes even mercerized cotton or twisted floss yarn are used in embroidery (Gupta & Mehta 2016) As its original form as a gift and sign of affection *phulkaris* are not produced, but the tradition has moved forward and changed itself to meet the demands of today.

Nowadays, Patiala district in Punjab is one of the major production centres in India for *phulkari*-style embroidery products. The embroidery style is simplified, materials are modern and fit to time, as are the products. (Gupta & Mehta 2014) In Pakistan, *phulkari*-styled embroidery can be found in especially in Hazara, but also in Swat, Swat Kohistan and Chitral areas of Khyber Pakhtunkhwa Provence. Maskiell (1999) argues, that the reason why *phulkari* embroidery tradition has seen attractive in Pakistan, is its distribution to several regions. In Hazara phulkari embroidery is known as *jisti*, a name given by NGO (Non-Governmental Organisation) to make it unique. (Malik 2011)

Phulkari tradition has changed its form in the course of time from 'domestic necessity', an important ritual and personal wrap to commercial adornment type to any textiles. It's meaning and influence on countryside women in Punjab cannot be underestimated and it has inspired art and artists in all fields. (Gupta & Mehta 2016) It has been influencing literature, songs and paintings. Amrita Sher Gil (1913-1941), significant avant-garde painter and originator of modern Indian art, for example, has given significant role for *phulkari* in her painting "The child bride", from 1936 (Figure 3). And vice versa, famous Bollywood movie Veer-Zaara (2004) from Yash Chopra, has given a name and inspiration for a contemporary *phulkari* pattern (Gupta & Mehta 2014).

2.2 Types of *phulkaris*

Phulkari is a general term for the clothing item, but it has many unifying characteristics. The ground cloth is always homespun cotton fabric, *khaddar*. Home-woven *khaddar* is not very wide, so the ground is formed by two or three widths of cloth sewn together. Usually this was done before dyeing and embroidery, but according to Rond (2010), in Western Punjab it was possible that the strips of cloth were joint after the embroidery creating sometimes a bit distorted continuity. The ground cloth is dyed with natural colours, traditional options for *phulkari* have been either dark blue *nila* with indigo (Indigofera tinctoria) or various hues of russet, *salu*(?), or undyed natural white colour of cotton. The dye plants that have been used for reddish-brown colour in Punjab area has been flowers of *palash* (Butea monosperma), bark of *kikar* (*Vachellia nilotica*) or most commonly the roots of *majith* (Rubia cordifolia). (Das 1992)

This Indian madder is a climbing plant that grows in the Punjab area. Dry roots are the part that is used for dyeing. They are boiled for few hours and then the cloth is dipped to hot dye bath for some time with some alum as mordant. Before that, the cloth is pre-treated in tamarisk (*jhau / lal jhau*) decoction. (Das 1992, 100) According to Mohanty et al. (1987, 11) tamarisk (*Tamarix dioica*), or tamarisk galls to be exact, are used for their tannin properties. Tannins gives naturally brownish hue and functions as mordant for the dye. This tannin additive explains the russet colour in *phulkaris*, because usually madder gives warm red hues. Blue colours achieved with indigo are dyed differently, because the indigotin is reactive with oxygen, and the process needs no mordants and is called as vat-dye.

As embroidery yarn is used floss silk called *pat*. Floss silk is a term for silk yarn which does not have twist. Silk was imported from Kashmir, Bengal, Afghanistan, Turkmenistan, China, still always dyed locally. Main places for *pat* dyeing were Amritsar and Jammu. Traditionally favoured colours were crimson, golden yellow, orange, green and white most favoured colours. (Das 1992, 101; Rond 2010) According to Gupta and Mehta (2016) traditionally embroidery was done solely with yellow, golden or ivory colours using contrasting colours only in borders. It can be expected, that after the arrival of synthetic dyes in the late 19th century, the range of colours has broadened.

Characteristic for the *phulkaris* are certain types of embroidery stitches. Most commonly the ground cloth is covered with darning stitches which are done from the backside of the cloth by counting the treads. This is why *khaddar* with its relatively rough structure is ideal for *phulkaris* because the yarns are easily countable. In addition to darning stitch, also herringbone stitch, cross stitch, satin stitch, double running stitch and blanket stitch (also known as buttonhole stitch) are known to be used in ornamenting *phulkaris*. (Das 1992,102; Morell 1994)

Embroidering from the backside of the cloth was the traditional way of working, but the revival of the tradition has brought alternative ways to work. Some embroiderers use the aid of embroidery hoop, some not (Gupta & Mehta 2016). Sometimes the motifs printed on the canvas to speed up the commercial production and the embroidery is done on them at the right side of the cloth. Morell (1994, 57) also mentions tacking and smearing or rubbing the pattern from existing *phulkari* with aid of metal pot and hair oil as ways of transferring the patterns. In most of the photos on contemporary *phulkari* embroiderers, they work from the right side of the canvas, but Malik (2011, figure 9) has one photo showing the work done from the back. The patterns are designed on printing blocks and transferred on the canvas with it (Gupta & Mehta 2014). In East Punjab this printing tradition is only fifty to sixty years old (Gupta & Mehta 2016). The effect of printing can be seen clearly in the quality of the embroidery. When the stitches are done with following the print, they all are not parallel and neatly side by side as they are when counting the threats, and the outcome looks sloppy. In the old *phulkaris* stitches are flouting as united field on the ground cloth and through the direction of the stitches beautiful and lively reflections of light achieved. This is an effect which is lost in contemporary products.

Different researchers classify *phulkaris* a bit differently, but the main categories are as follows:

1) Classical *phulkari,* where patterns are distributed on entire cloth and the ground cloth is visible
2) *Bagh*, where the entire surface is embroidered, patterns are associated with each other and the ground cloth is nearly invisible
3) *Chope*, has embroidery with double running stich which is visible on both sides. *Chope* is used for drying the bride after ritual bath, that is why it is bigger than other

phulkaris. It is embroidered by *Nani* – maternal grandmother. In *chope*, there is never embroidered borders to ensure never-ending and unlimited happiness. (Rond 2010) Then again, according to Irwin and Hall (1973, 162), the *chope* is draped upon the bride at same time that red dyed ivory bangles are placed on her wrists. It usually has triangular designs going lengthwise along the borders and when it has a bird motif, it is called *chope di chidi* (Gupta & Mehta 2014).

In addition to these, for example Rond (2010) classifies *thirma* phulkari which is one with white background. S*ainchi* has figurative embroidery where the motifs come from the village life including human, animal and building figures. Das (1992) gives examples of *nilak*, which is made on black or dark blue khaddar with crimson, or yellow embroidery yarns - these were popular among Hindu and Muslim peasantry. *Til Patra* again, were made on low-quality cotton with sparse dotted embroidery like sesame seeds was for domestic servants on auspicious and festive occasions. *Suber* is auspicious read shawl, usually with five motifs – one in the centre and one in each corner, it is worn by the bride in *pherey* ceremony where she circles the fire seven times (Das 1992, 100).

The patterns and motifs of embroidery were traditional, executed from the memory, and had innumerable names. Each family had their own preferences according the patterns and colours used in embroidery (Irwin & Hall 1973, 161). The names of the motifs are not established, they can vary by the embroiderer, and have very little analogy with the actual theme. Gupta and Mehta (2014; 2019) have listed some of these names for various patterns used in the *phulkaris*:

- *belaniyan* – 'pastry roller'
- *jangir kach* – 'diagonal lines'
- *chal pakha* – 'hand fans'
- *rumalan wala* – 'handkerchief' =square motifs that fill the whole fabric
- *mirchian* – 'chili'
- *bavan* – '52' = 52 to squares with all different motifs
- *suraj mukhi* – 'sunflower'
- *kachua* – 'tortoise'
- *kapah tindyan* – 'cotton balls'

- *ladu* – ‘sweet balls’

Because in the past, embroidery was done from the backside by counting the threats, it is understandable that geometric motifs were in favour. According to Crill (1999, 13) Western Punjabi *phulkaris* are more likely to have entirely geometric design, whereas in Eastern Punjabi *phulkaris* are more likely *sainchi*-style with human and animal figures. Gupta and Mehta (2016) argue that the *phulkaris* from Western Punjab are considered as superior to the ones from East Punjab.

Embroidering *phulkaris* was very labour intensive, and they were done more as a leisure time activity than fulltime job. Completion times are therefore only approximate. According to Gupta and Mehta (2014) embroidering full *bagh* have taken from at least three months to years to complete. Malik (2011) reports one and a half months working period for common contemporary *phulkari*. Maskiell (1999) has calculations from a month for an ordinary *phulkari* to even ten years for complicated *bagh*.

Nazar battu, a black spot, is a concept against the evil eye, common in various textiles in Asian cultures. *Nazar battu* is also used in *phulkaris*. Often it can be found from a corner or in a hidden place in a form of a small flower. Also, the deliberate imperfections in embroidery, such as sudden change of colour, are explained with warding off the evil eye. (Das 1992; Malik 2011) Though, Das (1992, 101) additionally argues, that if one dyeing patch was finished, the motifs were finished with the closest shade available, and this would explain the sudden changes in hues within same motif.

The prices of contemporary *phulkaris* cannot be compared with price level in Europe, but they reveal some understanding to the value of the work. Prices of contemporary *phulkaris* in Hazara’s bazaars start from 4000 Pakistani rupees, PKR (21 € in 19.10.2020) and goes up to 30000-50000 PKR (157-262 € in 19.10.2020) (Malik 2011).

2.3 Social aspects

Phulkaris were always done as a sign of affection. Originally, they had no financial value, they were never done for sale. As beautifully as Das (1992, 94) it expresses, *phulkari* is an expression of beaty and love - minimum of materials and maximum of labour-intensive work. They were one of the few material possessions that women could inherit in the past

society (Maskiell 1999, 381). They were idealised as embodiment of maternal love, care, devotion and family pride (Das 1992, 97).

Embroidering one *phulkari* requires enormous amounts of time. They have significant value as showing the socioeconomical status and skills of the family, especially the women folk. As harsh as it sounds, a girl's value could have been measured by how many motifs and how skilfully she can embroider. *Phulkaris* are done as traditional dowry items. Girls are taught on early age to embroider and by the time of marriage they are mastering the skill. (Gupta & Mehta 2014)

As a concept of gift, *phulkaris* tie close relatives and family members together by strengthening the bonds (Gupta & Mehta 2019, 2). Maskiell (1999, 381) also points out, how *phulkaris* were exchanged in friendship relations to show affection and underline its importance. In the nineteenth century it was a custom to give at least twenty-one *phulkaris* as trousseau, as sign of wealth of her family (Gupta & Mehta 2016).

Phulkaris have important role in religious and festive occasions, especially weddings. *Phulkaris* are given as wedding gifts for the husband's family and they serve as important artefacts in the event. The most important is the *chope* which the maternal grandmother starts when the child is born. This has ritual aspect. Correct timing for the first embroidery stitches were astronomically determined.

2.4 European influence on *phulkari* tradition

Europeans, and especially British have had indisputable effect on the historical phases of *phulkari* tradition. By changing the global cotton markets during the colonial era, the local production in Punjab diminished. There were no more home-spinning or -weaving cottage industry that would have produced khaddar for the ground cloth. Women employed by that industry got left unemployed and in financial distress. Maskiell (1999) claims, that 1880s was the turning point when *phulkari* consumption internationalised.

By exhibiting *phulkaris* in various fairs in the turn of twentieth century the British created an international demand for *phulkaris* as an export item especially to USA and Britain. Lahore had major exhibitions in 1864, 1881, 1893 and 1909 – especially

meaningful was the 1881 Punjab Industrial Exhibition (Maskiell 1999). Financial difficulties forced women to sell their inherited heirlooms and start producing *phulkari* for livelihood. International markets had of course effect on the design and pattern development which wanted to meet the demands of European taste. The change from leisure time activity for loved ones to commercial earning had direct effect on the quality of the ground cloth and embroidery yarns as the neatness of the stitch work. Post-Independent India was influenced by western culture – in films, television and radio attitudes were changed towards consumerism and materialism at traditional art and craft's expense. (Gupta & Mehta 2016)

3 Framework and research questions

In this study I want to use close examination in means to dive into the skills of *phulkari* embroiderers. The term close examination is understood in this study as analysing the object technically as deeply as possible. The method will be explained in chapter 4.1.

The background information of these museum objects is insufficient, even accurate dating is quite vague. This problem is well expressed in Maskiell's (1999, 379) footnote:

> *"The most frustrating problem for historicizing phulkari practice is that the extant textiles are notoriously difficult to date, and museum records necessarily tell when the textiles were collected rather than when they were manufactured. Textile historians, collectors, and craft revivalist have analyzed extant phulkaris in the subcontinent and abroad for details of construction and design, but, as art history is not subdiscipline of history nor bound by historians' commitment to dating change, there has been little attempt to fix phulkari lore in time."*

This promotes neutral angle of approach, where these *phulkaris* that were chosen as research material, are seen as representations of craftmanship, and the research questions concentrate to subjects that these artefacts can answer as physical objects.

The research questions for this study are:

1) what materials and textile techniques are used in phulkari textiles?
2) which of these materials and techniques can be proven/traced by close examination?
3) do the findings correlate with the established knowledge of phulkaris?

These questions will be addressed with series of questions that are asked from the objects. The history, types, designs and social aspects of *phulkaris* have been covered over and over again, but from the object studies point of view very little research has been done. Research with close examination and microscopy analysis lacks entirely.

4. Methods of object studies and close examination

In the introductory part of a book *History and material culture : a student's guide to approaching alternative sources* (2009, 2), Karen Harvey sums up beautifully the core means of object and material culture studies. She introduces theoretical classifications of Bernard Herman that helps to understand different types of object-based studies. **Object-centred** study can be categorised in bi-partite way. Art historical way is the kind what has been used in the literature survey in the above section of this study. Through the object or objects the focus is aimed on the emotional and psychological dimensions of the material culture. The second part of this study concentrates on the physical attributes of the object which is the second way of object-centred research. **Object-driven** study again, regards 'objects as evidences of other complex social relationships'.

Harvey claims that material culture is more than only the objects or artefacts, it shapes and integrates to human experiences. Objects are active and autonomic subjects, not just something to reflect. And moreover, material culture requires new research practices. This is something that this study is aiming to answer for.

Various researchers have created and developed methodology for object-centred research to systemise the study. For example, Caple ([1996] 2006) has created an investigation technique he refers to as FOCUS (formalized object construction and use sequences). He points out that there is not any formalised system to report objects in detail and often the brief and inaccurate descriptions are written with academic jargon. In his model the target is to perceive the life cycle of the object in concern and it is intended to archaeological artefacts especially.

Severe and Horswill (1989), in their relatively old article, introduce their own method for object studies. It is based on E. McClung Flemming's (1974) model that draws attention to series of five properties and four operations: **History**, **material**, **construction**, **design** and **function** are the properties, whereas **identification**, **evaluation**, **cultural analysis** and **interpretation** are the operations (Figure 4). Severe and Horswill have modified this model to suit better in analysing a dress as an artefact. In their version the properties are **material**, **design and construction**, and **workmanship** (Figure 5). History, even though it is an important part of the research, has been left behind. As dealt with also above in this study,

history and accordingly dating, can be only unreliable concluded from the artefact itself when textiles are in question.

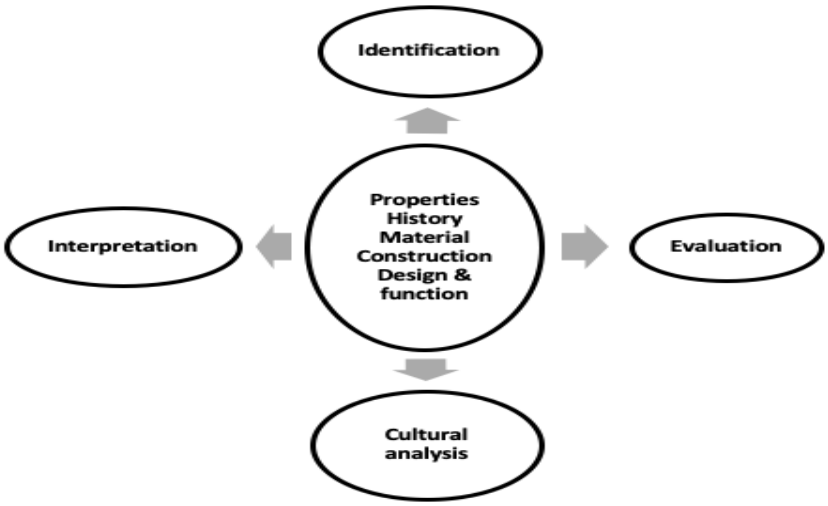


Figure 4. Flemming's model (1974) for object-based study.

Their **design and construction** is divided to sub-sections of **basic elements**, that includes bodice, sleeve, and skirt; and **important intersections of elements**, including shoulder, waist, armscye, and sleeve joint. The **workmanship** is again divided to subsections of **treatments**, including seam finish, shaping method, fullness control and hem technique; and **level of skill** with selection of materials, cutting, finishing and effect. These all three properties are examined with four operations of **identification**, **evaluation**, **cultural analysis**, and **interpretation and intuitive analysis**. The properties explain themselves within the names, but operations are more complex constructions. Identification includes detailed description of all the aspects of manufacture and wear. Evaluation can be understood as aesthetic value. Though it overlaps with cultural analysis and interpretation. In cultural analysis the object is placed in its original surroundings and aspects of product analysis and content analysis are taken into consideration. For the interpretation researcher has to be aware of the cultural context the object belongs. Intuitive analysis allows the researcher to express his or hers own subjective feelings towards the object.

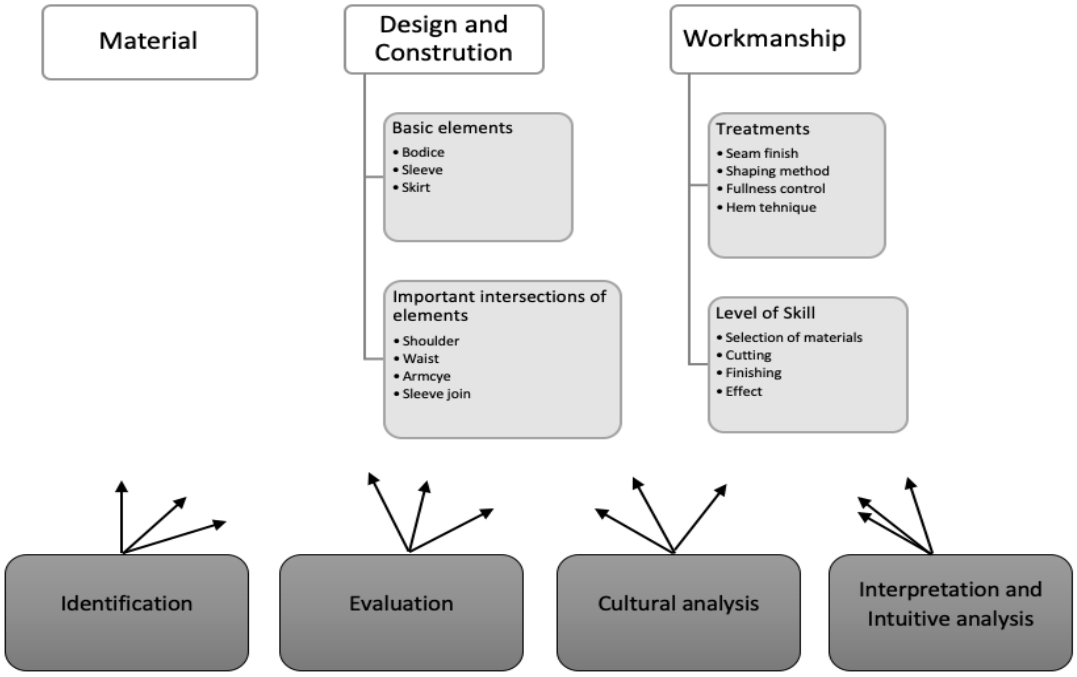


Figure 5. Severe and Horswill's (1989) model for object-based research for dress.

Mida and Kim (2015) have more recent version of the process how to study a dress in object-based research. They base their model on the work of Jules Prown (1982). His model has three stages where the object analysis moves from **description** to **deduction** and forward to **speculation** (Figure 6). The **description** includes **substantial analysis** which can be regarded as physical measurement and description of the object, materials, and fabrication of the object, i.e. how the object is manufactured, and which techniques have been in use. After that the description moves to **content analysis**, which express the visual motifs on the object, and finally to formal analysis. **Formal analysis** is easier to understand when it is turned the other way – analysis of the form. What forms, textures, colours can be detected from the object.

In **deduction**, researcher moves to observe the artefact from the user experience point of view, or like Prown puts it, to observe 'the relationship between the object and the perceiver' or 'what it would be like to use or interact with the object'. It includes **sensory engagement** (whenever the object is accessible); **intellectual engagement**, which can be understood as what facts the researcher can deduct from the object. In his article Prown gives example of pictorial object and how to seek out answers to questions like what time of the day it is, or effects of the natural forces. This is tricky to translate into

textiles though. Final part of the deduction is **emotional response**. This is something what also Severe and Horswill had included in their model with the name intuitive analysis.

In the **speculation** stage, researcher creates **theories and hypotheses** – tries to understand and interpret the object in the means of the culture that fabricated the object. The **program of research** ties external knowledge to the object. This part can be done by using various research materials depending on the researcher's interests.

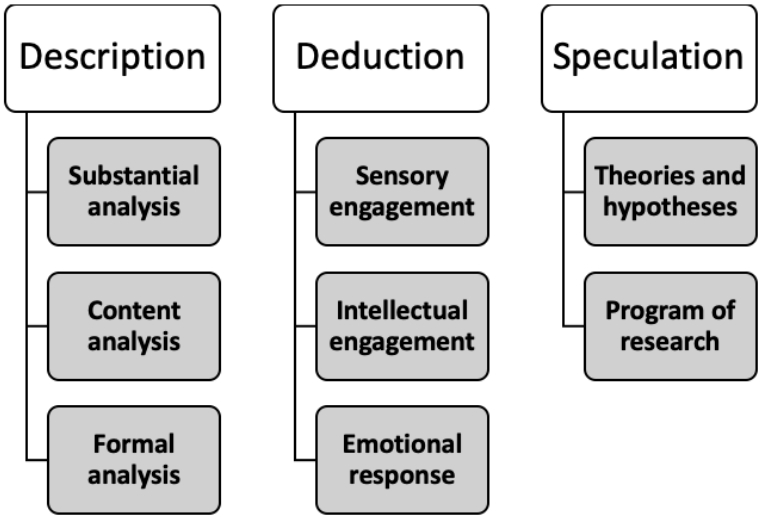


Figure 6. Prown's (1982) model for object-based study.

Mida and Kim's model follows three stage structure of Prown. Their categories are **observation**, **reflection** and **interpretation**, with supplementary checklist to facilitate the analysis (Figure 7). The observation phase is pretty much the same than with Prown, but they combine a concept of **slow approach to seeing**, with it. In practise this means 'looking carefully and thoughtfully'. I had an honour to meet and have a presentation in the same slot in with Ingrid Mida in 2017 Cloth Cultures: Future Legacies of Dorothy K. Burnham - conference in Toronto, Canada. Over there she gave a presentation on the subject: *The Curators Toolbox: Drawing and The Slow Approach to Seeing*. In her presentation she drew attention to using drawing as observation method. By drawing is possible to record details that are not visible in photographs. Additionally, drawing forces the observer to pause by the object and really concentrate to its characteristics.

Instead of Prown's deduction, Mida and Kim propose more comprehensive phase of reflection. Similarly, it includes **emotional and sensory engagement**, and works on

an intuitive level. Researcher is encouraged to write down personal observations. Gathering and analysing sources of contextual material belongs to this stage. Provenance records, reference items in other collections, supporting images and textual material among others are valuable sources for reflective analysis.

In **interpretation**, the information collected from the object and from the source materials are connected. In Prown's model this was called speculation. Mida and Kim sees the Prown's theories and hypotheses phase often problematic in case of dresses and on this account propose an alternative course of action. Their vision of interpretation is more creative and versatile according the interest of the researcher.

The supplementary checklists provide a detailed tool for studying a dress with object-based analysis. The checklist for **observation** includes forty comprehensive questions divided to six sub-sections. **General** section has questions about the sex of the user, labels, dominant colour or patterns and condition. **Construction** contains questions about the structure – measurements, it sewn by hand or machine, are there pockets or lining etc. In **textile**, questions are about material, finishing, and surface decorations. **Labels** provide information about the maker. **Use, alteration and wear** concentrates on modifications and possible damage in the dress. Photographs, provenance, receipts and other additional material are dealt with in **supporting material**.

The checklist for **reflection** consists of three sub-sections with altogether twenty exhaustive questions. **Sensory reactions** is surveying **sight**, **touch**, **sound** and **smell**. **Personal reactions** are mapped out with seven different questions. **Contextual information** helps to gather all possible source material with directive questions.

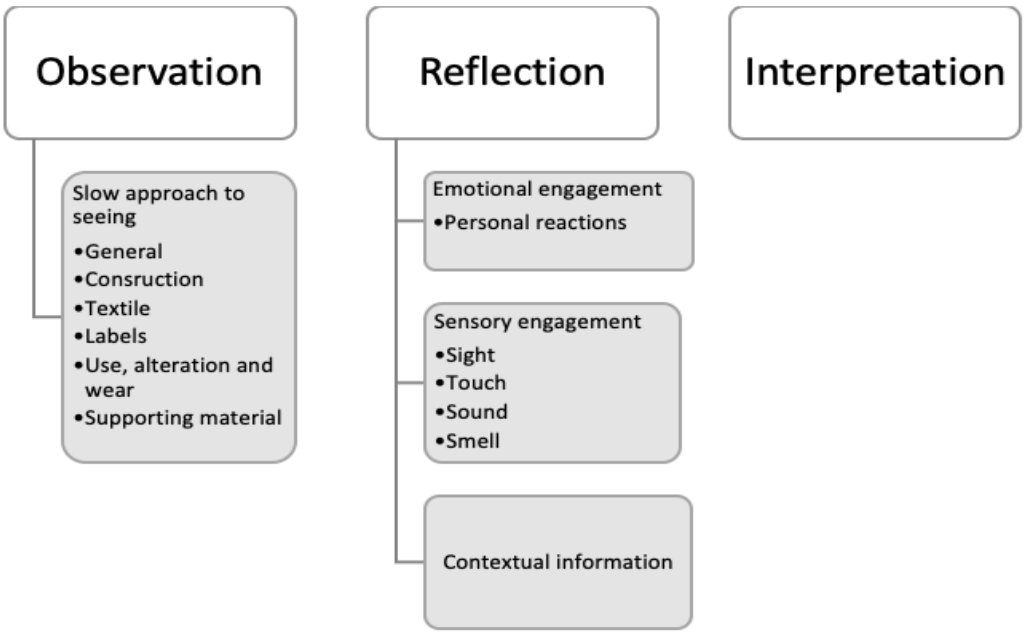


Figure 7. Mida and Kim's (2015) model for object-based research for dress.

4.1. Close examination method for this study

The above-mentioned protocols for object-based study are either meant for general and all-embracing purposes, like Caple (2006), Flemming (1974), or Prown (1982); or specified in studying dress as material presentation, like Severe and Horswill (1989) or Mida and Kim (2015). In this study, the target is very specific textile, *phulkari*, and due to that, the protocol requires some modification. The models that are intended for dresses are filled with unsuitable questions about the shape and structure which cannot be applied to *phulkaris*.

Archaeological textile research has always been interested in microscopic level structures, probably because only small fragments is what is remaining. Historical textile research has had more interest in speculation (Prown 1982) or reflection (Mida & Kim 2015) part of the analysis. This can be explained with the museum context that provides commonly the textiles for study. Museum database has at least superficial data of the artefact – measurements, material and provenance. And these are rarely challenged, whereas they sometimes should.

In the very beginning I told the story about how I got acquainted with *phulkaris* in the National Museum of Finland when I was studying the donated textile collection and made the entries for the database. I measured the items, wrote the descriptions, deducted the materials. In this point the emphasis is on deducted. I did not have, and rarely the museum workers have, any equipment to analyse the materials. It is all based on educated guesses. Unfortunately, these guesses are often taken as truth and without questioning or testing in the later phases of the objects 'life-cycle' in the museum. For example, in an earlier study I made concerning White Karelian textiles in the same museum, I was able to point out with detailed identification analysis some mistaken information regarding the plant fibre materials the textiles were manufactured of (Suomela et al. 2020).

For example, an interesting question regarding the *phulkaris* is the material of the embroidery yarns. It is always said, that it is silk, but as came apparent earlier, viscose and polyester are frequently used in contemporary *phulkaris.* This information, which is not visible for naked eye, changes the impression of the artefact profoundly. Due to my personal interest on microscopic analysing methods, I want to take the object-based research to its next level by including them to the process.

My study is following the model of Mida and Kim (2015), but with some alterations. The checklist is modified to suit the purposes of this study. Questions are allocated to structurally less complicated textile artefact. Instead of the structure, the interest is more drawn into pattern and motifs. Microscopic study (*Special questions for Microscopy*) is attached as new sub-section to the observation stage. Modified checklist used as the method of this study is found in Appendix 1. The research material is approached more like as textile artefacts point of view than as clothing items, even though *phulkari* is part of a female dress. This makes the modified checklist available for studying textiles more widely than just clothing and accessories. It also includes section of *Special questions for Phulkari*, which surveys properties that are characteristic only for this certain type of textile. In future use of the modified checklist, should be re-done according the textile type in concern.

The close examination for the textiles was done in two working days in the main warehouse of the Finnish Heritage Agency in Vantaa. The textiles were closely analysed and photographed following the protocol and checklist introduced in the previous chapter.

In situ microscopic analysis was conducted with portable USB-connected Dino-Lite microscope (model AM4515ZT, 20x-200x, with RK-06A rack). Additional macro-level photos were taken with Black Eye macro-lens (20x) that can be connected with a clip to the camera of a mobile phone. Fibre analysis were done in the premises of Aalto University, in Nanomicroscopy centre, Espoo.

Fibre samples were mounted on glass slides with permanent mounting media Entellan New™ and observed with transmitted light microscope Leica DM4500P with rotating stage and polarized light features. The microscope was integrated with the Leica application suite LAS Core 4.5.0 software and Leica DFC420 camera with 5-megapixel resolution. Due to the tight schedule, cross-sectioning was done with the paper glue method (Rast-Eicher 2016) which unfortunately is not really photography-friendly. Cross-sections were cut with razorblade and analysed with above mentioned microscope with light coming from above.

5. Materials and Results

Research material in this study were six (6) selected textile items from the Ethnographic Collections of the National Museum of Finland. It consists of all the *phulkari* items the museum has in its collections – four actual *phulkari* shawls and two utility textiles which were embroidered with similar style. Results are presented object by object and fibre analysis is in its own section.

5.1. *Phulkari* VK6471:37

This colourful piece can be classified as *bagh*, because the embroidery covers almost the entire base cloth (Figure 8). Embroidery is done on russet colour rectangular shape ground cloth. It consists of four parts, long strips of cloth at the sides, and more narrow section in the middle which is made of two parts. The measurements for the whole *phulkari* are length 253 cm and width 120 cm. Components are 253 x 47,5 cm at the both sides and 116 x 24 cm and 133 x 24 cm in the middle.

Figure 8. *Phulkari, bagh* VK6471:37. Photo: Markku Haverinen, the National Museum of Finland. (CC BY 4.0)

The parts are connected at the other side with neatly done butt seam, at the other side and in the middle, the seam is done with running stitch with small seam allowance (Figure 9). All the parts are from same fabric and they are dyed at same time, before, or after the connecting. Connecting has been done prior the embroidery. The ground cloth has thread count of 15 yarns/cm in weft and 16 yarns/cm in warp. It is woven in tight plain weave with hand-spun Z-twisted single-plied cotton yarn (Figure 10). In the long strips, the whole width of the cloth has been utilised, so there are selvedges at long sides that are embellished with yellow blanket stitches (Figure 13). Short sides have not been neatened.

Figure 9. Seam done with running stitch and seam allowance.

Figure 10. Close-up showing the weave and the embroidery yarn.

The embroidery is done neatly in traditional way so, that embroidery yarn is spent economically only at the right side of the cloth (Figure 11). Only the herringbone stitch at the borders has long float at the back. The centre part is covered with embroidery where groups of nine squares form a larger square. These large squares are surrounded with triangles made with double running stitch which is also visible at the backside (Figure 12).

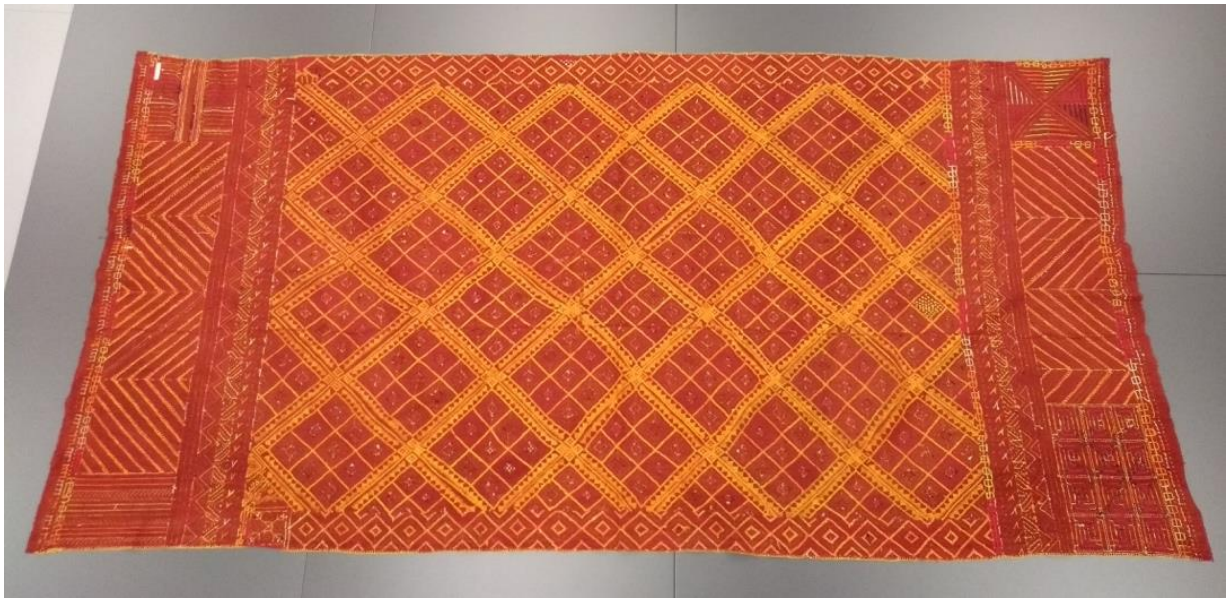


Figure 11. Backside of phulkari VK6471:37.

The structure of embroidery is much clearer when observed from the backside. The centre has this square pattern called *surajmukhi*, ´sunflower´ (Rond 2010). At the long sides, there are small borders with variation of same squares than in the middle. At the ends, there are different themes in every corner. Between the corners, there are *laharya* themes in both ends. In one corner can be interpreted to be miniature version of *darshan dwar* - motif (Figure 8, bottom corner). Usually this motif which has two opposing rows of doorways, is done in full scale and it is one certain type of a *phulkari* (Mason 2017, 60-65). Next to and in the corner above is small bird, or peacock motifs that are done with double running stitch (Figure 14). In the top corner next to the bird, is stylised flower that looks like a star. In an opposite corner (Figure 8, top corner) is a pattern called *kaudi* (Figure 13; Rond 2010). The long chains of white small squares are said to resemble cowrie-shells that were used as currency in the past. *Cowries* are used as a symbol of fertility.

Figure 12. Double running stitch.

Figure 13. *Caudi* pattern and blanket stitch at the side.

Quite large palette has been used in the embroidery– white yellow, orange, pink, dark blue and black. The yarns can mostly be expected to be untwisted silk floss (Figure 10). Though, observing the Figure 15 closely reveals that probably the white and the black yarn are not the same quality than the others. The black yarn is almost worn out, which is quite common in old textiles. In the dyeing process of black, commonly iron is used for darkening the hue. The iron works easily and cost-effectively, but it also embrittles the fibres causing them to degrade faster than in other colours. Furry appearance gives hints of the material could be wool. White yarn again, is clearly different. It consists of at least five Z-twisted plies and does not have the same gloss than the other yarns, suggesting it could be cotton.

Figure 14. A bird- and flower-motifs.

Figure 15. Close-up of yarns used in herringbone stitches.

Likewise the colours, different embroidery stitches has been used lavishly. Like mentioned above blanket stitch has been used in the sides and centre motifs are lined with small motifs done with double running stitch. The main stitch type is, according the tradition, is the darning stitch which is barely visible in the back. In addition to these, also herringbone stitch, cross-stitch, cluster stitch and cretan stitch are used (Morell 1994).

It is impossible to say much about the dating or provenance of this textile. Laila Kindt (1932-), who is a retired textile teacher who loved to travel around the world, donated her textile collection the Museum of Cultures (former part of the National Museum of Finland) in 2011, and this *phulkari* with it. According the database information she had purchased the item from Delhi in 1996. Then again, Kindt has displayed her collection in the webpages of Tekstiilikulttuuriseura, where she mentioned the year of purchase to be 1981. Rond (2010) has in his article a *surajmukhi phulkari* which he states to be from West Punjab. The motif and the grade of work look really similar to this one. In a photograph (Figure 16) of his article where different embroidery stitches are introduced, the resemblance is remarkable. Embroidery style and colours are exactly similar.

Figure 16. Similar item introduced by Rond (2010). Picture with his permission. (The not mentioned stitch forming a zigzag pattern is cretan stitch.)

I have to admit, that I have personal feelings toward this *phulkari*. It is the one that got me acquainted with *phulkaris* in the first place. And after all the research I have done, I still consider it as the most beautiful phulkari I have seen. I love its colourfulness and fullness with patterns. The motifs come to life when light touches them, and the level of skill and craftmanship is so amazing. Embroidery is done with such accuracy, that the *phulkari* creates a prodigious experience.

5.2. *Phulkari* VK6419:1

This *phulkari* is a surprising item (Figure 17). Looking from the far, it seems strange. But when you get close, the craftmanship is astonishing. Ground cloth is made of two brown strips, equally wide, though the other has short strip of slightly darker fabric in the end. Probably the fabric had run out and was supplemented with an additional part. Or the cutting to halves had failed for reason or another, and the mistake had been repaired with an extra part. The measurements are 260 cm for length and 116 for width. The strips are 58 cm wide, and the supplementary part is 12 cm long. Parts are connected with running stitch and small seam allowance – long seam is sewn with white and small in supplementary part with brown thread (Figure 18).

Figure 17. *Phulkari* VK6419:1.

Figure 18. Backside showing the seams and supplementary part.

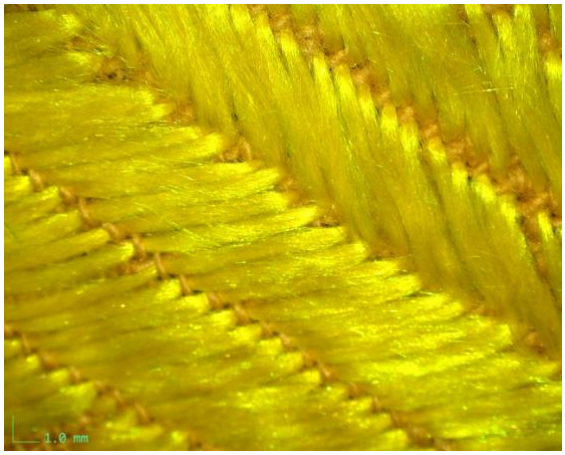
Figure 19. Backside showing the regularity of the stitches.

The type of this *phulkari* is not possible to clearly classify, but because the embroidery almost covers the whole ground cloth, it can be called as a *bagh*. Incredible regularity of the stitches can be seen in the back (Figure 19). Valuable embroidery yarn is only spent at the right side. At quick glance it might look that the phulkari is embroidered as one piece, but small details reveal that the longs strips of ground cloth are connect after the embroidery. There are colour changes in both centre motifs and bands in the ends just where the middle seam goes, and even thought the outlines in central motifs do meet, the embroidery inside the motifs does not (Figure 20).

Figure 20. Parts are connected after the embroidery.

The diamond-shaped motif in the centre part, is stylised flower (Sethi 2017, 15), done with white and bronze colours. This flower motif with its variations, is commonly used pattern especially in contemporary *phulkaris* (Malik 2011; Gupta & Mehta 2016). The beauty of this motif is in the regular darning stitches 45° angles that come to life when light reflects on them (Figure 23). Both ends are identical. At the ends, first there is a wide band done with darning stitches from side to side. The band is yellow from the other half and orange at the other strip of ground cloth. At both ends, there are four large motifs that resembles maybe palm leaves. Both long sides have similar narrow bands that continue all the way to the edge. At the long side the edge is neaten with overcast stitch, even though there is selvedge. Short sides are not neatened at all. The colour change from white to bronze in one corner of the centre section is strange, but not uncommon among *phulkaris* or other Indian textiles. Sometimes these colour changes are explained with warding of the evil eye or running out of same coloured yarning stitch. In this one the change is so obvious that it is difficult to believe it would have been an accident.

All the embroidery is done with darning stitch (Figure 21) except those overcast stitches at the long sides (Figure 24). White, yellow, orange and white and bronze are the colours used in embroidery. Like the microscopy pictures reveal, they are untwisted floss yarn, probably silk. As it is shown, embroidery is done with extreme accuracy. One more proof of that is the way how embroidery yarns are fastened. I was truly difficult to find proper sampling spots for fibre analysis, because there were no yarn endings anywhere.



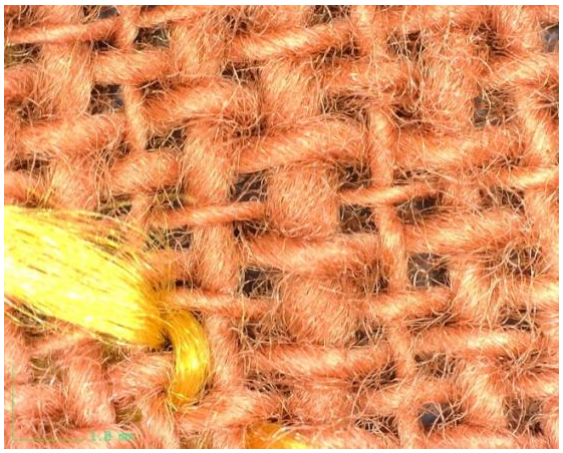


Figure 21. Precise darning stitches.

Figure 22. Weave in close-up.

In closer look it is possible to notice, that ground cloth is handwoven plain weave from hand-spun yarn with Z-twist. Compared to the above introduced phulkari, the weave is looser and yarn thickness is quite variable (Figure 22). The thread count is same in both brown and dark brown parts, 16 yarn per cm for warp and 11 for weft. This suggests, that they are from the same origin but different dyeing batch. Usefulness of the portable USB-microscope was shown in examination, when cotton is possible to identify with it without invasive sample taking. Cotton fibres are flat with irregular convolution, as can be seen in Figure 25.

Figure 23. Flower motifs in the centre part and how light reflects in them.

Figure 24. Overcast stitches at the side.

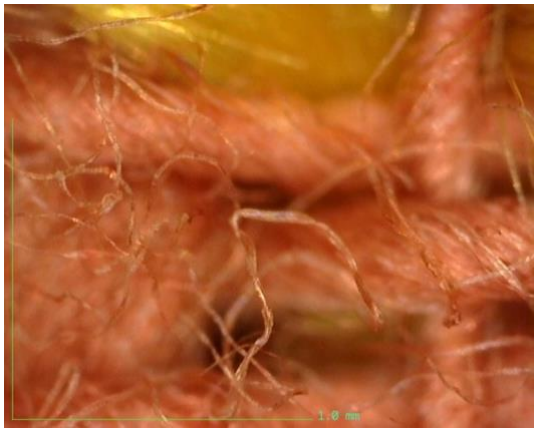


Figure 25. Cotton fibres in Dino-Lite picture.

The history, background and origin are partly faint also with this textile item. According the museum database, it is dated to mid-twentieth century, but no further information is given to back up this claim. Textile designer Helena Perheentupa (1926-2019), who just recently passed away, had strong connections to India, and especially to Ahmedabad, Gujarat, where she had been teaching in National Institute of Design since 1968. She had bought this piece from, based on the museum database, a shop called Manubhai of Saurashtra Handicraft. According to Edwards (2020) Saurashtra Handicrafts was established in 1969 in Ahmedabad by Manubhai and his uncle, and was well known dealer of old embroideries the shop owner themselves bought from the villages. This gives certain reliability that the piece is old and authentic. In 2005 Perheentupa had donated her textile collection to the National Museum of Finland which has owned the textile since.

5.3 *Phulkari* 6419:2

This textile is clearly a *chope*, ritual textile for weddings, in its classical form. It has all the traditional features that are connected to this type (Figure 26). The embroidery is done on reddish brown ground cloth which is constructed from three equally long strips. Measurement for the *phulkari* are length 308 cm and width 173 cm. The strips are 61 cm at the sides and 51 cm in the middle. Like expressed in the literature, this *chope* is clearly larger in size than the other *phulkaris* in this study.

Figure 26. Phulkari 6419:2.

The strips are connected with neat butt joint. Sewing yarn is quite thick, and in exactly same colour that the ground cloth suggesting that the dyeing has been done after connecting the parts (Figure 27). Microscopic analysis revealed that this Z-twisted sewing yarn had two S-twisted plies that consisted of three fine Z-twisted plies. Seam has opened for about 10 cm in one end and is fixed with running stitch in another (Figure 28). According to some literature, *chopes* were sometimes dyes after embroidery was done. This might have been case with this one also, though embroidery at the long sides must have been done after dyeing due to use of multiple colours. The embroidery crosses on with thin lines over the seam, so it is difficult to say if the parts are connected before or after the embroidery is done.

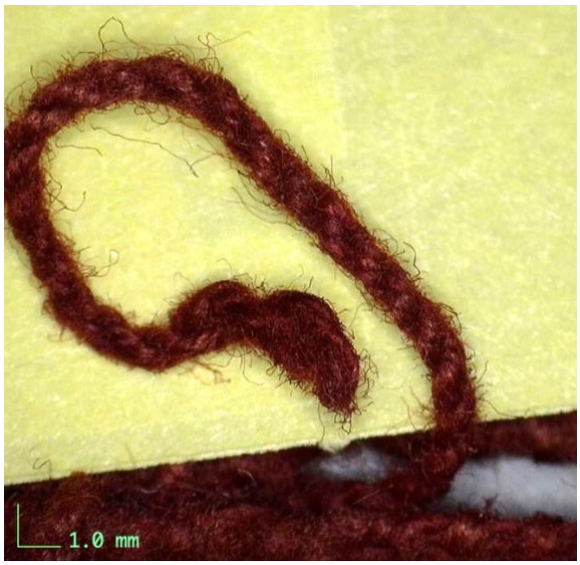


Figure 27. Sewing yarn in the seams.

Figure 28. Seam fixed with running stitch.

The centre part is filled with triangle motifs. At the sides, there are bigger and in the middle smaller trinangles that look like they are hanging from the larger ones, and even smaller ones hanging from those forming a centre line to the textile. These triangles are most common theme in *chopes.* The triangles are embroidered with double running stich that looks similar on both side of the textile. The true beauty of this phulkari dawns only when looked at closely and carefully. Every triangle is filled with different embroidery pattern (Figure 29). A pattern with two birds or peacocks repeats three times in this *chope,*

two times at the other side, and one time at the other. It is placed in the vertex of the large triangles. (Figure 30). At along both long sides, goes panel with dense diamond pattern with sudden changes in motifs. Both sides of these panels have a line filled with squares that are formed by four cross-stitches done with dark orange, pink and light green. These lines are not identical in the backside, though decorative even there (Figure 31). Long sides with selvedges are decorated with light green blanket stitches, short ends are without fastening as usual. At the other end patterning seems to be left unfinished as should be according the tradition (Rond 2010).

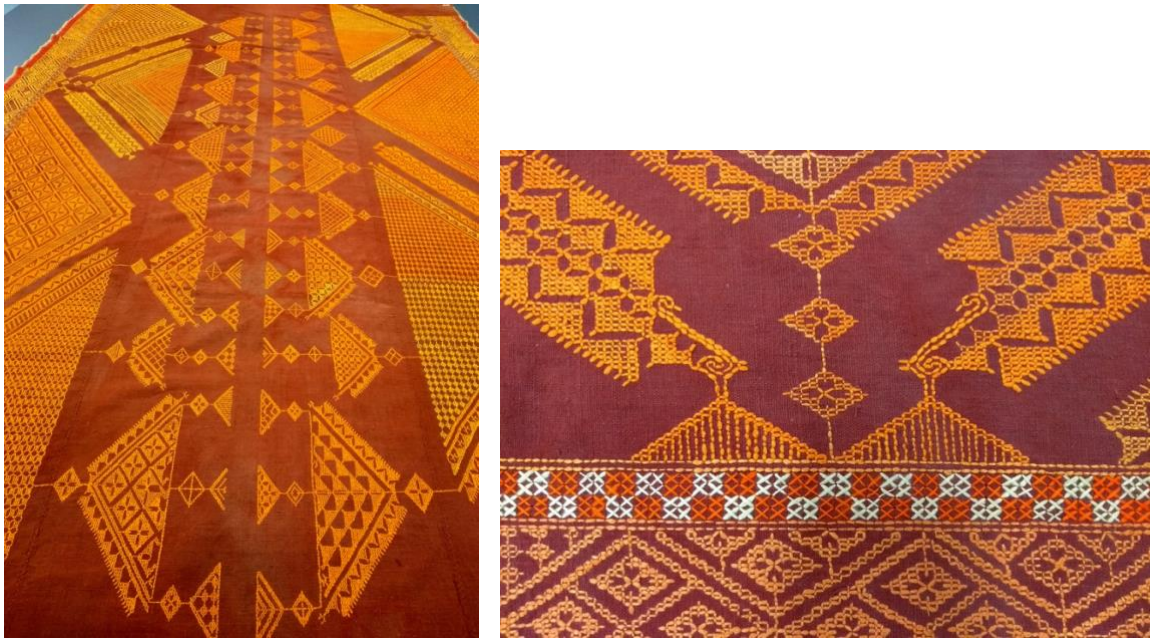


Figure 29. Embroidery patterns done with double running stitch.

Figure 30. Embroidered bird motifs.

The ground cloth is densely woven plain weave which seems well balanced (Figure 32). Thread count is 16 yarns/cm for the warp and 13 yarns/cm in weft. Yarn is hand spun and Z-twisted. Also in this case, the fibres can be identified to be cotton from the artefact without sampling the item.

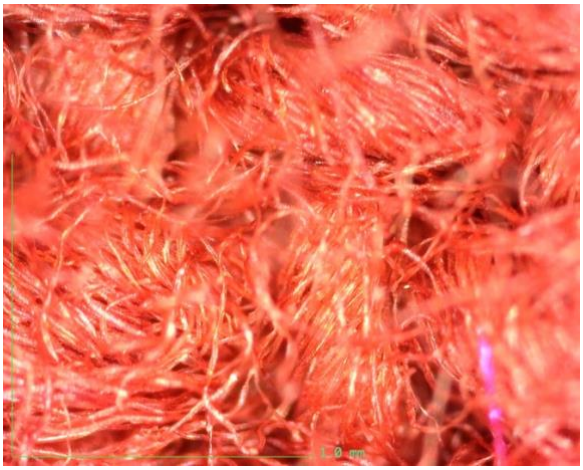


Figure 31. Right side turned over.

Figure 32. Microscopy picture of the weave.

This item is also donated to the National Museum of Finland by Helena Perheentupa in 2005. According the museum's database, she had purchased the textile from Manubhai of Saurashtra Handicrafts, in Ahmedabad, Gujarat. She had bought the textile right when the store had opened in 1969 (Edwards 2020) with information that it is comes from an itinerant pedlar and that it is originally from the early twentieth century. The place of purchase does strengthen the confidence that this authentic piece made for its ceremonial purpose.

5.4. *Phulkari* VK6419:3

This *phulkari* represents East-Punjabi *sainchi* style, due to the human figurines in the middle panel. In Islamist West-Punjab it was not possible to use this style of embroidery. Regarding the middle panel, rest of the shawl is filled with embroidery in *bagh* style (Figure 33). The quality of this phulkari is way inferior to the previously introduced items. Embroidery is sloppy, done in a hurry without counting the threads. The shine of floating silk floss is not utilised. Embroidery stitches are done in parallel direction giving dull expression. Lines of the motifs are wandering and not straight, like a child had drawn them. Yet, this could have been a stylistic choice. In the Jill and Sheldon Bonovitz Collection, in Philadelphia Museum of Art, is pattern-wise similar looking item where the outlines look a bit distorted (Figure 34).

Figure 33. Phulkari VK6419:3.

Figure 34. Similar style *Phulkari*. Photo (with permission): Philadelphia Museum of Art: Purchased with funds contributed by the estate of Myrna Brind, 2005, 2005-78-1.

This *sainchi phulkari* is constructed of two equally wide side panels and narrow middle section which has three parts. Measurements for the whole shawl are 239 x 140 cm. Side panels are 60 cm wide, and the middle sections parts are 93 cm, 93 cm and 53 cm long. Parts are sewn together with butt joint which is tighten so much that actually the stitches are closer to overcast stitch. Part of the central panel are connected with fell seam (Figure 36).

Figure 35. Close-up of the ground cloth.

Figure 36. Seam structures.

The ground cloth is deep dark black, in such extent, that it is justified to argue that it is dyed with synthetic dyes. Additionally, the weave and yarn are so even, that they probably are industrially produced, and only mimicking home spun and woven *khaddar* (Figure 35). The plain weave is almost equally balanced with thread count of 13 yarns/cm to warp and 14 yarns/cm to weft. In some point of the life cycle of this phulkari, someone has attached about 20 cm from the other end an additional five cm wide casing for a rod to display the item (Figure 37). Casing is sewn from common plan woven industrial cotton. Its structures are sewn with machine, but attachment is done by hand with herringbone stitch.

Figure 37. Casing for display.

Figure 38. Wedding jewellery (?), bird and writing in Punjabi.

The inferior quality is evident also in the backside and in close-ups (Figure 40). Ground cloth is visible between the darning stitches and the stitches are no parallel. The difference can easily be seen in comparing Figures 21 and 40. Embroidery is done rough-handed and is well visible in the backside. In such of an extent, that one could say that it is the more beautiful, or at least more calm side of this textile (Figure 39). Stitches used in this phulkari are darning stitch, stem stitch, herringbone stitch, cluster stitch and cretan stitch. In both ends are panels of *laharya* pattern followed by multiple narrow lines. In the middle are, at both sides, large panels with distorted geometrical patterns. In both ends of the middle part, are stylised flowers inside a square. In the middle are figurines of humans, birds, buildings and maybe jewellery. It has been common practice to depict wedding jewellery in *sainchi phulkaris* (Sethi 2017, 24) and the round white motif could be interpreted as one in the Figure 38. In the same Figure 38 is also text written in Punjabi. Light coloured arched motif could be also jewellery, or sort of a construction or a shed. Two motifs between them resemble shrines or temples. With close and careful examination, it was possible to find even single mirror, *shisha*, in the embroidery (Figure 41). Some scholars add one classification type to ones mentioned above, *shishadar bagh* that is embellished with mirrorwork (for example Morell 1994, 57). Probably it is there to ward off the evil eye.

Figure 39. Backside of phulkari 6419:3.

Provenance of this *phulkari* is as faint as it is with other *phulkaris*. It had belonged to the collection of Helena Perheentupa which she donated to the National Museum of Finland in 2005. Database information says that it is purchased from the same store than the two previous ones, Manubhai of Saurashtra Handicrafts in some time in the 1970's and it would be dated to early or mid-twentieth century. It is known that already in the late nineteenth century women were embroidering *phulkaris* for sale, so it is not reasonable to make straight interpretation from the quality to the dating. What can be quite surely argued, is that this piece has been done for sale. There are no signs of affection conveying to the observer.

Figure 40. Low quality darning stitches.

Figure 41. *Shisha*.

5.5 Wedding food cover VK6078:1

This and the following item are not *phulkaris* but are embellished with similar embroidery. This item is entered to museum database as wedding food covering. No reference or other information has given about origin of this artefact, except that Marjatta Parpola, how has written a lot about South-Asian textiles, has done the entry. This gives certain reliability towards the information. According to her this item is from the Valley of Swat and the dating is in late 1980s. It is from Pathans, people who live in the Pakistani side of Punjab. Parpola wrotes that Pathans used this kind of food coverings in weddings and only them have custom of using black fabric in weddings.

Figure 42. Wedding food covering VK6078:1.

Figure 43. Showing the clumsy work with the extra fabric, likewise the perfectionism in embroidery in front and back.

The item is square 82 x 80 cm with fringes, 76 x 73 cm without (Figure 42). Ground cloth is *khaddar* style, but probably industrially made. It is not clear which is the warp and which weft, so the thread count is 15 yarns/cm for the other yarn system, and 14 yarns/cm the other. The covering is surrounded with industrially made fringes that are attached with sewing machine. Black, industrial cotton fabric is attached from three sides to the backside so, that the item can be used as pillow cover (Figure 43).

Embroidery is done really carefully counting the threads using pink and rose untwisted embroidery floss. Symmetrical stylised flower motif is spread on the whole cover and surrounded with border of lines and zigzags. Only one corner differs from others. Maybe because it is not appropriate to make anything entirely perfect. The perfectionist embroidery has quite disagreement with clumsy work altering the item into pillowcase.

5.6 Wedding pillowcase VK6078:2

This sympatric and inventive pillowcase is said, based on the museum database and Marjatta Parpola's knowledge, to be provenanced from the mounting areas of Pakistan and time before partition in 1947. Both sides of the rectangular item are embroidered and are in their own way, as presentable. The sides are connected with brass and cloth buttons.

Measurements are 80 x 40 cm. Embroidered pieces are hemmed with sewing machine. Thick braid is hand sewn rounding the both pieces. The braid forms loops in other piece in every 3,5 cm and these loop work as buttonholes. The other side has buttons in same distance.

Figure 44. Wedding pillowcase VK6078:2 at one side.

Figure 45. Wedding pillowcase VK6078:2 at the other side.

Ground cloth is undyed natural white. If this would be an actual *phulkari*, it would be called as *thirma*, according the colour. The thread count is 16 yarns/cm in other yarn system and 22 in the other. The other side is covered with multicoloured phulkari embroidery with stylised flowers. Work has done carefully counting the threads as can been seen from the inside of the cover (Figure 46). The borders have different style of embroidery. Paine (2001, 62-63) has a shawl from Hazara area in Pakistan in her book, with similar motifs than in the border. She refers these motifs to originate from Kohistan region, and at least with Internet search, is fairly easy to find items with similar embroidery style. As can be seen from the close-up (Figure 47), embroidery yarn is also different – it has a slight S-twist.

The other side is plainer. It has the same Kohistani borders. In the middle is large diamond shape area surrounded with band of Kohistani embroidery, and in the corners and in the middle, stylised flowers embroidered with phulkari style. Colours that have been used in embroidery are yellow, pink, red, blue, green and bright green, and stitches are darning stitch, stem stitch and cross stitch. At the plainer side some colours have bled because of moist. In the corner of large diamond is writing 2400 made with ballpoint pen.

Figure 46. Pillowcase from inside.

Figure 47. Close-up of the Kohistani embroidery

5.7 Fibre analysis[1]

While analysing the textiles in the warehouse of the Finnish Heritage Agency, small fibre samples of different yarns were taken and analysed afterwards with transmitted light microscope in Aalto University's Nanomicroscopy Centre. Samples are presented in Table 1.

Table 1. Fibre samples from *phulkaris*.

	VK6471:37	**VK6419:1**	**VK6419:2**	**VK6419:3**	**VK6078:1**
Sample A	Ground cloth	Brown ground cloth	Ground cloth	Ground cloth	Rose embroidery yarn
Sample B	Dark violet embroidery yarn	Dark brown ground cloth	Sewing yarn	Red embroidery yarn	Fringe
Sample C	Orange embroidery yarn	Orange embroidery yarn	Light green embroidery yarn	White embroidery yarn	

As was expected, ground cloth in every item was cotton. What this kind of analysis can reveal is the condition of the material, and this is useful information especially for conservators in the museum. Also all the embroidery yarn samples were silk, which shows that they are not contemporary and quality is authentic.

Phulkari VK6471:37 (Figure 48) had its ground cloth in best condition among the studied textiles. There is though some organic residue on the surface here and there. This organic matter tells about microbiological activity, for example forming of mould. Small malformations in fibre samples taken from embroidery yarn reveal them to be silk. Silk has very little longitudinal characteristics, but these little natural changes differentiate it from synthetic counterparts. In cross-section made from sample B can be seen that the cross-sectional characteristics are quite oval and only slightly triangular. In literature cross-section of silk is described as triangle, but the form is dependent on the species.

[1] Due to technical problems, the microscopy pictures are presented without scalebars.

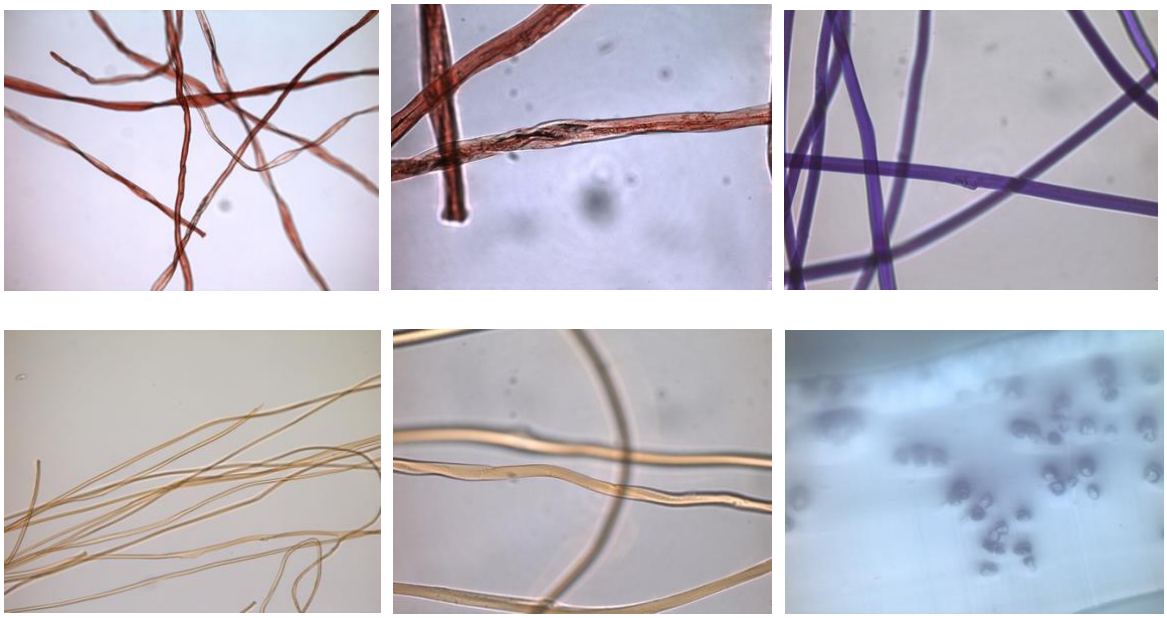


Figure 48. Microscopy pictures of VK6471:37.

Phulkari VK6419:1 (Figure 49) had its ground cloth in alarming condition. In addition to microbiological residue, also small holes on the surface of the fibres was detectable. This is a sign that microbes attacked and started to corrode its structure. In sample B that was taken from the darker part of ground cloth, fibres seem flatten better than in sample A. According to the weaving structure it was possible to speculate that the cloths were from same lot, but the quality of the fibres tells different. Cotton fibres flatten when they get mature, and flat fibres are sign of a right time harvested crop. It is quite common in historical textiles that the cotton fibres have not flatten properly.

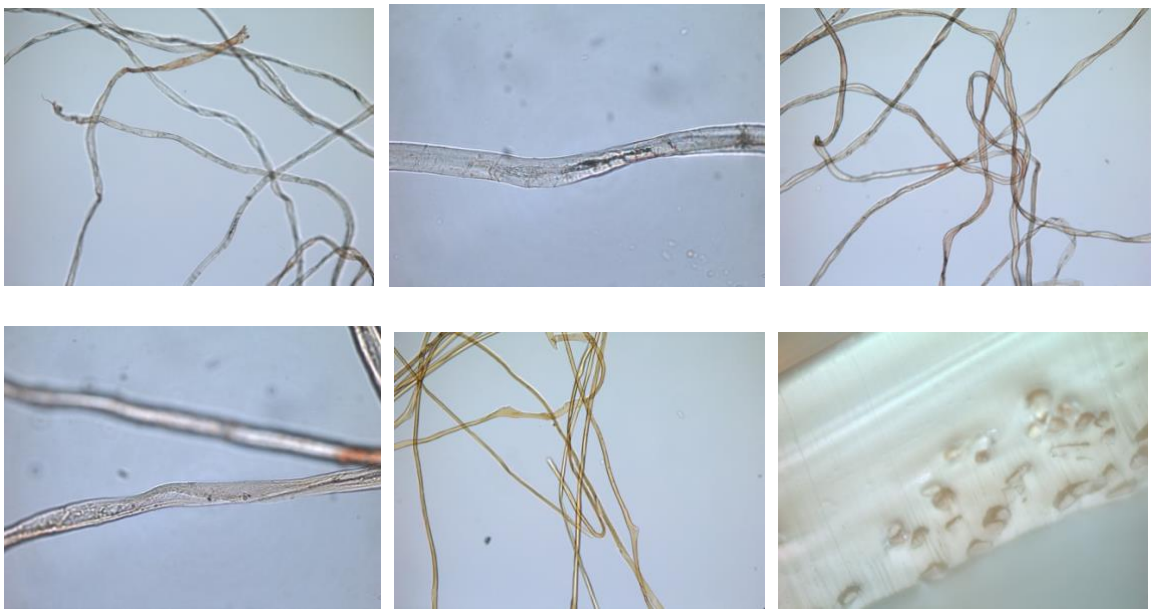


Figure 49. Microscopy pictures of VK6419:1.

In p*hulkari* VK6419:2 (Figure 50), the cotton is rural kind, not well flatten and malformations here and there. In this one also micro-organisms have started to attack. Sample B had been taken from the sewing yarn, and it was also cotton. Similar type, but in addition it had same really fine, ribbon-like fibres. The silk sample C was really vibrant. It kept turning and twisting almost like cotton and the fibres were exceptionally thin.

Figure 50. Microscopy pictures of VK6419:2.

Ground cloth in phulkari VK6419:3 (Figure 51) was in similar quality than other, there was quite a lot organic matter on the surface of the fibres. Both silk samples were in good condition. Sample B had no signs of microbe attack or residue, sample C had some. Sample C was homogeneous in quality, though typical malformations were detectable. What was unifying in all silk samples were the vane-shape malformation that were noticeable in all of them.

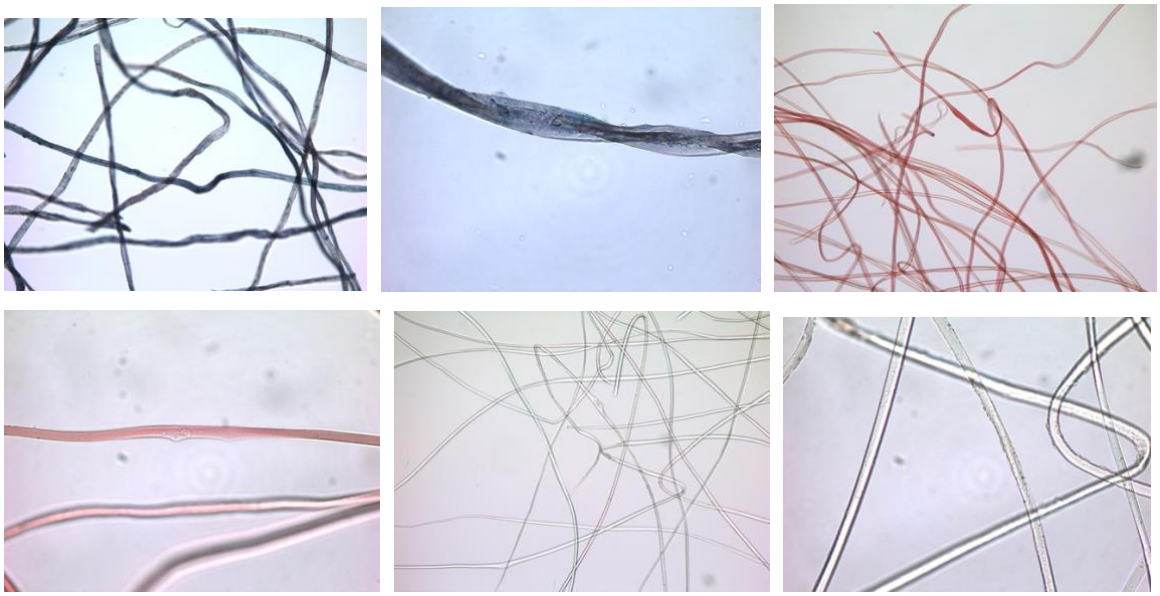


Figure 51. Microscopy pictures of VK6419:3.

From wedding food cover VK6078:1 (Figure 52) was taken only two samples. The rose embroidery yarn was silk and in good condition. The other sample was taken from the fringes. Already while sampling, it was expected to be some synthetic fibre and microscopic analysis confirmed that. Fibres were thick compared to natural fibres, they had longitudinal stripes and spots, and the cross-section was irregular. With microscope the identification is not certain, but based on the reference material, characteristics of the fibre refer to acetate (Räisänen et al. 2017, 23).

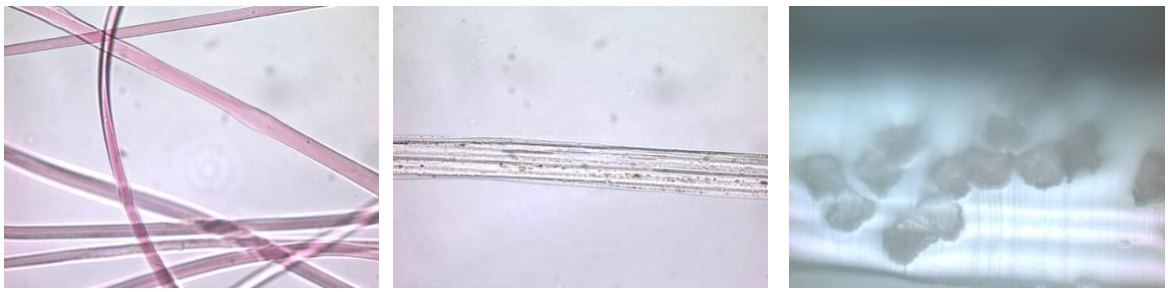


Figure 52. Microscopy pictures of VK6078:1

6. Discussion

Some of the individual item related discussions are already addressed with results in previous chapter. Here the focus is in overarching themes. Some generalisations can be made even from this small sampling. Home-woven *khaddar*'s width is in this study between 47,5-60 cm. Whenever possible, the whole width is utilised. The same idea of consuming the fabric applies to probably all textile traditions in the world. All the phulkari shawls in this study structured from at least two whole width strips. Only in one (VK6419:1) it was possible to prove that it had been connected after the embroidery.

Taking precise measurements of these *phulkaris* was actually a difficult task, though they are rectangular in shape, because in all of the corners were stretched. The reason for this can only be speculated. The short ends of phulkari are always left without finishing, at long sides selvedges will take care of it. Thread count in all first three items, which can quite surely be assumed to be home-woven, is in all 16 yarns/cm in warp and between 11-15 yarns/cm for weft. All in all, the numbers go between 11 and 22 yarns/cm which tells us that the ground cloth somewhat medium thick cloth.

The cotton yarn in ground cloth is always spun in Z-twist. There are no mentions in the utilised literature about the spinning equipment, but presumably spinning wheels were used and not spindles. The spinning direction is the same than at least in North European textile tradition uses for plant fibres.

Microscopy analysis revealed that the ground cloth was in all cases cotton. The embroidery yarn was similar, with identical characteristics. The cross-sectioning refers to mulberry silk, *Bombyx mori*, and these identifications can be seen as quite sure (Rast-Eicher 2016). Though, silk is problematic in analysing because it has so little details characteristically. It can be easily confused with synthetic or regenerated fibres, in this case viscose. The get absolute certainty, the fibre samples should be studied with for example FTIR (Fourier-transform infrared spectroscopy). Silk as protein fibre and viscose as cellulose based fibre would give easily recognisable results.

Phulkaris do not really do justice for themselves in photographs and therefore are difficult to study without physical presence. As shawls they are so large, and the embroidery is so detailed that it gets lost in pictures. In addition, large part of the subtleties

of the embroidery is based on the reflections of light and this is impossible to capture in photographs. Another thing which is impossible to experience without physical presence, is the lightness of the material. Imagining all the amount of embroidery yarn and that semi-thick ground cloth, the lightness of these *phulkaris* surprised me totally. Additionally, astonishing was the level of craftmanship. It is quite certain, based on the literature, that in embroidery of old *phulkaris*, no hoops were used, and how even are all the stitches and how none of them are pulling. Studying patterns is, based on this experience, easier on the backside of the cloth. The right side is often so filled with embroidery, that the patterns are difficult to detect.

Use of the double running stitch in *chopes* overtook me and reminded about the certain unity of textile traditions around the world. As mentioned before, I have studied Karelian textiles before, and I have though that using this stitch is something indigenous and original for Karelian *käspaikka* towels. The skills, tools, patterns and material have travelled and been invented around the world without possibility to detect the precise provenance in many cases.

The results did not help with the dating problem at all. The dating of these items relies solely on the information given by the vendor. By the quality, only the phulkari VK6419:3 was clearly made for selling purposes. The quality of the stitches was comparable with contemporary works. We cannot know or value the history of these textiles. We do not know if they are authentic and have been use in their original purposes, or made only to provide living. But what we can value, is the craftmanship in these textiles. We can value them by their beauty and how pedantically they are done. They are representatives of their tradition, created under certain convetions. Still, we can value them as object as they are, but should not create a history they might not have.

8. Conclusions

The amount of research material in this study is relatively small but surprisingly versatile. It covered the main types of phulkari comprehensively. The study is qualitative in kind and methodologically deep analysing object study, so small number of items is not seen as a problem. Even items for comparison was found in other museum collections and literature. Fresh knowledge, not found in previous studies were able to achieve, especially with microscopy methods. Additionally, the modified methodology for textile items, based on the work of Mida and Kim (2015) is feasible for future studies. Now it has larger focus group than in the original and it suits better for ethnic textiles and textiles in larger meaning than just a dress.

Problematic, with literature and the research material, was the uncertain provenance, dating and historical knowledge. Same unsure story of the history was told again and again with countless assumption from scholar to scholar. Perhaps in this kind of cases it is actually better to concentrate on actual artefacts, and hear what they can reveal. From the research material of this study it was impossible to assume provenance or dating based on the quality of the work, materials or patterns.

I was using the Dino-Lite microscope as part of my analysis kit for the first time. Dino-Lite is not a new invention, it has been in use for a long time in various museums and by different scholars. The things that I wanted to test with it worked well, and I will definitely use it again. It brings new perspective to the study and enables to show other people what I see as a researcher.

These *phulkaris* are beautiful examples of extraordinary craftmanship and as shown, have lot to tell. They are part of the huge collection of the National Museum of Finland and none of them have had the privilege to exhibited in the museum. Maybe now when they have got a voice, this might change?

7. Acknowledgements

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Appendix 1. Checklist for Observation and Reflection

This checklist is adopting the work of Mida and Kim (2015). The alterations are marked with bolding, and some questions have been excluded. Sections Special questions for *Phulkari* and Special questions for Microscopy are my own.

Checklist for Observation

General

1. a) What type of textile it is?
   b) What is its apparent use?
2. a) What are the main fabrics that have been used to make the **textile**?
   b) What are **the inferential materials**?
3. What are the dominant colours and **type of patterning**?
4. Does the **textile** have any labels?
5. **Can any assumption be done about the timing of textile?**
6. Can the **textile** be handled safely without causing further damage?
7. What are the most unusual or unique aspects of the **textile**?
8. Does the collection have similar types of **textiles like it, or with similar style?**

Construction

9. Describe the main components **and structure of the textile. Note measurements of different components.**
10. **Are the components of the textile** machine-stitched, hand-made or a combination of these methods? **What stitches have been used?**
11. Does the **textile have a fastening system?**
12. Are there any remarkable features in the construction **or appearance?**
13. Is the fabric selvedge visible in seams? **Is the whole width of the cloth utilised?**
14. **Is the construction typical for the dating of the textile?**
15. Is the **textile** lined?

Textile

16. **What all types of materials has been used in the textile-artefact?**
17. **Are there any finishing processes that have been used? Such as bleaching, pressing or glazing?**

18. **Are there any comprehensive decorations? How are the decorations done? Are they woven, printed, embroidered or how? Describe the technique in detail.**
19. Are there any form of applied decoration, **forming a detail**, such as applique, trim, lace, beading, embroidery, buttons, ruffles, pleated bands, or bows? **Describe the technique and materials in detail.** Are there any signs that any such decoration has been removed?
20. Has the textile faded of otherwise changed in colour with passage of time?

Use, alteration and wear

21. Has the **textile** been structurally altered in any way?
22. Where does the **textile** show wear?
23. Is the **textile** soiled or damaged in any way? Have seams ripped, **decorations worn off**, or fabric decomposed? Is there evidence of insect damage?
24. Has the **textile** been dyed to alter its original colour? Have trim or other forms of embellishment been unpicked or removed?
25. **Does the textile represent typical form of the type used in the period?**

Supporting material

26. Does the collection have any provenance records associated with the **textile**?
27. Are there any photographs of the **textile**?
28. Are there any further documents or information about the garment that might indicate the original price of the **textile**?
29. Are there any manufacturer, store tags or original packaging associated with the **textile**?
30. Are there any similar **textiles in the collection that might be from the same origin**?

Special questions for phulkari

31. **What is the type of phulkari?**
32. **What are the measurements? What are the measurements of the parts of the ground cloth, and how they are arranged?**
33. **How the parts are connected? What stitches have been used, is there any seam allowance left? Are the parts connected before or after embroidering?**
34. **Is there any finishing in the sides? Is there selvedge?**
35. **Describe the colour of the ground cloth? Are all parts in same colour?**
36. **Describe the weave. Is it handwoven or machine made?**
37. **What is thread count in weft an in warp? Are all parts made from the same cloth?**
38. **Describe the yarns in ground cloth. Is it hand spun or machine made? Are warp and weft similar yarn? Are they plied? What is the thickness and the twist?**

39. **Describe all embroidery stitches used.**
40. **How the embroidery stitches look from the backside of the ground cloth?**
41. **What type embroidery yarn is used? What all colours?**
42. **Describe all embroidery motifs.**

Special questions for microscopy

43. **From where the sample is taken? What is the sample size?**
44. **What features can be noticed with stereomicroscope when preparing the samples?**
45. **What observations can be done with TML (transmitted light microscopy)? What is the condition of the fibres? What are the longitudinal characteristics of the fibres?**
46. **What observations can be done with PLM (polarised light microscopy)?**
47. **What are the cross-sectional characteristics?**
48. **Can fibres be identified, how?**

Checklist for Reflection

Sensory reactions

1. Sight – Does the **textile** have stylistic or religious references?
2. Tough – What is the texture and weight of the **textile**?
3. Sound – **If the textile is wearable**, would a person wearing this textile make noise?
4. Does the **textile** smell?

Personal and user-related reactions

5. What was the impetus to examine this **textile**? **Why did you choose it for study**?
6. Are you the same gender and **age group that the textile was meant for use**?
7. **If the textile is used or worn close to body**, how it would feel?
8. **How do you like the textile?** Is the style and colour appealing to you?
9. **For what situations the textile is meant for? What emotions it might have generated in its user?**
10. Did the maker want to invoke emotion, status, sexuality, or gender roles with the **textile**? Does the textile seem to express humour, joy, sorrow, fear, **or other emotions**?
11. Do you have an emotional reaction to the **textile**? Can you identify a personal bias that should be acknowledged in your research?

Contextual information

12. If you were permitted to access the **database** records for the artefact, what does this information reveal about the **history of the textile prior museum**? **Who owned it, how it became part of the collection**? **Where is it originally from and how is it purchased**?
13. Does the museum have other **textiles** that are similar?
14. Do other museums have similar objects? Can you identify similar objects in online collections?
15. Have other scholars written about this type of **textiles** in books or peer-reviewed journals?
16. Are there similar kind of **textiles** available for sale on Etsy, eBay, online vintage retailers, or on auction sites?
17. Are there photographs, paintings, or illustrations of this **textile, or similar kind,** in books, magazines, museum collections, or online?
18. **How the textile fits to its cultural context?**